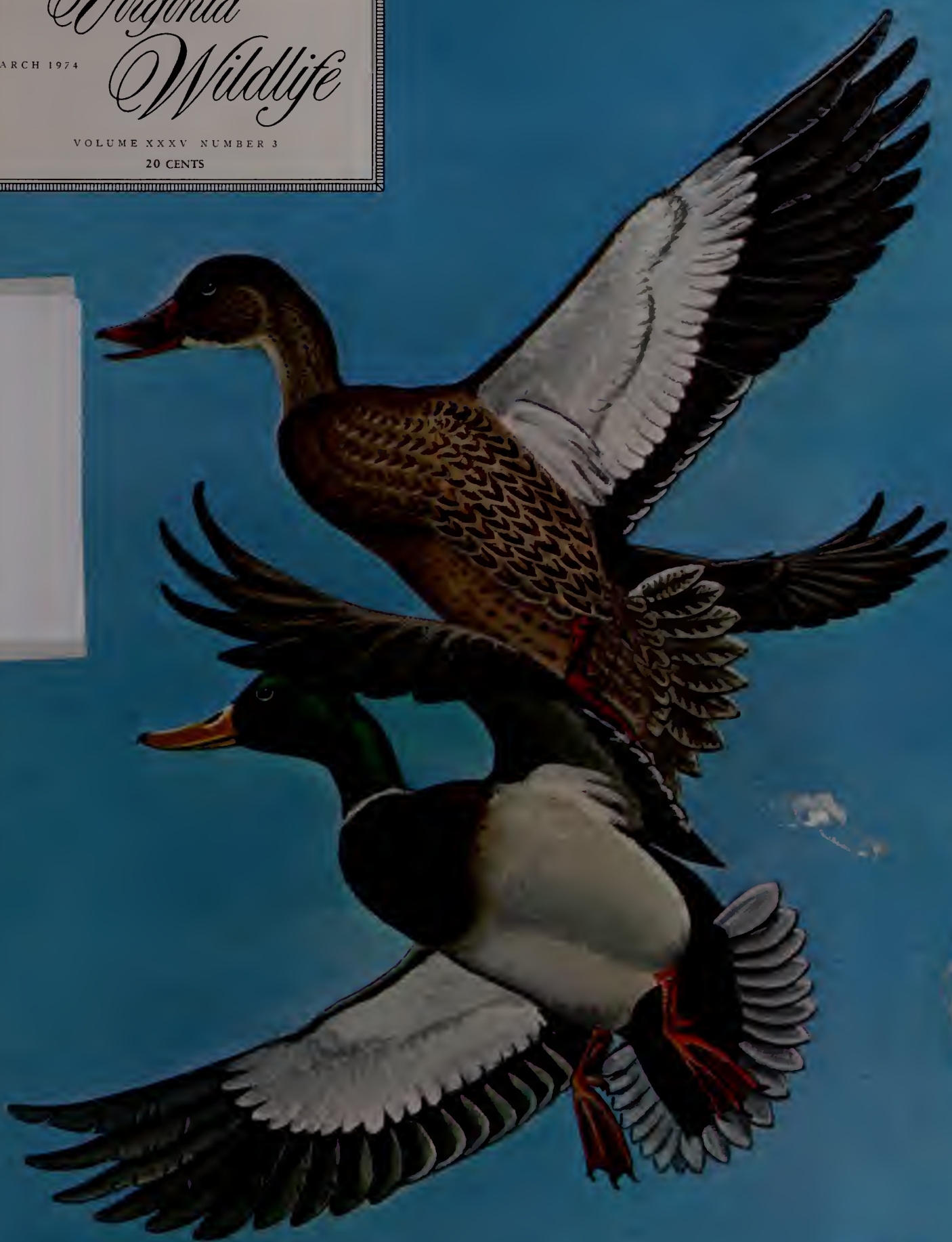


Virginia Wildlife

MARCH 1974

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Virginia Wildlife

**Dedicated to the Conservation of
Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia**

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COMMONWEALTH OF VIRGINIA

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Observations, conclusions and opinions expressed in *Virginia Wildlife* are those of the authors and do not necessarily reflect those of the members or staff of the Commission of Game and Inland Fisheries.

COVER: Mallards, by Carl "Spike" Knuth of Richmond, newly employed as the Game Commission's audio-visual supervisor.

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ENDANGERED:

CONCERN for Endangered Species has been chosen as the theme for this year's wildlife week observance March 17-23. "Endangered" has become a super-word like environment, energy crisis, and Watergate, and as such tends to be over used and misunderstood. Just recently on a morning TV news program an attractive young lady representing an animal protection fund made impassioned pleas on behalf of Australia's kangaroos, repeatedly stating that they were "endangered" and faced "extinction." A few moments later she stated that local governments were expected to poison over a million this year. An animal of which there are a million to be poisoned is certainly not "endangered" in the true sense of the word and does not immediately face the prospect of extinction. This is not to belittle the plight of the kangaroo, which is one that warrants concern, but the incident shows the way the word is carelessly used for impact these days. If we just mean to imply that an animal faces an uncertain future, all species, including man, would qualify.

A true endangered species is one that is in imminent danger of extinction because of circumstances that are threatening a critically low population or because the entire population lives in such a restricted habitat that it could easily be wiped out if that habitat was altered. A typical endangered species is an animal whose habitat requirements are so specific that it lives only in a certain type of tree, log, swamp, rock formation or other similar restricted habitat. Many such species never were abundant and others are remnant populations from ages past when this type of habitat was much more prevalent due to more favorable climate or terrain. Some, like the eagle and peregrine falcon, are unusually susceptible to pesticide residues. Others, such as the wolf and cougar, are scarce because of direct conflict with man's interests, especially in times past. Sport hunters have not been responsible for any species being classified as endangered, but market hunters, operating illegally, have, as in the case of the American alligator.

In Virginia 4 amphibians, 5 reptiles, 2 birds, 7 mammals and 7 fishes probably rate endangered species status. There may be as many as 100 species that are rare in the state mainly because Virginia encompasses the edges of several habitat types. Thus the state is the southern limit for some species, the northern extremity for others, and its mountains harbor scattered populations of species more common to the West. Preserving these odd habitats through protection or purchase is the only practical way to save these animals from extinction.

While endangered species deserve our most urgent concern, they should be considered a symbol of the problems to be considered in preserving all wildlife in the abundance we would like to enjoy. Let us hope an animal doesn't have to make the endangered species list before it will receive the attention necessary to insure its survival. By that time, it may be too late!—H.L.G.

Color Connoisseur

THANKS! for the beautiful color—BETWEEN THE COVERS—of Virginia Wildlife! The addition of color prints to the pages greatly enhances the selected articles and has the effect of placing the reader at the scene.

Albert A. Pinkle
Newport News

Although we can't see our way clear to print every issue in color, we do plan to use it frequently. We hope you find our April color issue even more exciting than January's.—Ed.

Collar Hazards

I noticed on page 8 of the January 1974 issue of *Virginia Wildlife* you picture a Labrador retriever wearing what appears to be a flea collar and a regular collar. Every package containing a flea collar carries a warning to remove the collar when the dog is wet. The collar, when wet, or on a very wet dog, can cause irritation. The irritation can become a large, weeping sore in an unbelievably short length of time.

Although the dog in the article in January's issue probably was not retrieving on the day the photograph was taken, it is wise to remove flea collars when there is a chance for dogs to get wet. This includes even coon or foxhounds on a rainy night, or setters in thick, high, wet grass, not just the gun/water dogs.

Peggy Mickelson
Boston, Va.

I completely concur with her advice. My Lab's flea collar is always removed if she's near water (the photo in the article was taken in my backyard). I might add to Mrs. Mickelson's well-taken advice that ANY sort of collar is a potential hazard to a dog retrieving in snag-infested waters—Pete Elkins, Fredericksburg

Trout Fishermen Squeezed

I see that the Game Commission is asking the General Assembly to increase the fee for fishing licenses and the trout licenses. Most serious trout fishermen will not howl at this because they are aware of the effects of inflation and rising prices. The fact that the increase is being sought after the trout limit has just been cut from 8 to 6 does appear to be a double penalty, however.

G. H. Yates
Danville

The Commission decided to lower the creel limit on trout to provide a more equitable distribution of the available trout among the trout fishermen. This does not involve a reduction in the number of trout produced and stocked. A lower creel should keep more trout in the stream for a longer time to benefit both the less expert angler after stocking and the expert on later trips. It is unfortunate but true that the requested increase in the cost of the trout license, if granted, will only provide for continuing the trout stocking program as it now stands.—Jack M. Hoffman, Chief, Fish Division



OPENING DAY

on the Big Stony

By STEVE RHODES
Schuyler

MY pocket watch showed five minutes till 12:00; the long awaited hour was near at hand. Almost out of sight around a bend, several fishermen could contain their excitement no longer and already were hooked fast to fighting, leaping rainbow trout. Their flyrods arched in half-circles as the trout put on the pressure.

With rod ready, I squatted on a rock at the head of a deep, extensive pool. The pool is 20 yards wide by 30 yards long and over 45 excited anglers poised on its edges, rods sticking out over the clear, cold water. Probably the only reason that anglers at "my hole" had not yielded to temptation and wetted their lines was that Mr. Game Warden stood off to one side. At three minutes before legal starting hour, everyone watched for the warden's nod.

There was building tension as the seconds ticked off. Many began eyeing the hundred or so torpedo-shaped trout barely visible in the depths of the pool. When the warden nodded, he unleashed instantaneous motion everywhere in sight.

Arms stretched and fingers fed line with a great urgent tenderness. Faces portrayed intense concentration as nimrod and old pro alike waited for the strike. Reels clicked and tinkled continuously as lines were cast and taken up.

I felt a strike on my line and struck back instantly. The rainbow answered with a strong pull downward. Shortly, I could see his sides flashing in the deep dark water as I coaxed him in. And all around me anglers were soon horsing in whipping, splashing trout. Fingers dipped hastily into yellow and pink salmon egg jars as anglers frantically rebaited. Some jars were overturned and their contents rolled into the water. It was a race for time. Everyone was trying to catch the trout before they grew scared and stopped biting.

Lines snagged and snapped; some tangled in dip nets. Monofilament fought monofilament when anglers on opposite banks unwittingly achieved a hook-up. It was

a hectic time of keen competition.

To add to the confusion, a spinner man gleefully lobbed his treble hooks into the middle of the tangled lines. A few people cursed, a few people swore, but most continued to haul in fish—often with a few lines in addition.

The long siege was over and the war had just begun. The place was Big Stony Creek in Giles County. The reason was opening day of trout season. Hundreds of anglers from all over the state had converged on this scenic mountain stream to participate in an annual experience full of thrills, drama and tasty results.

For the majority of anglers, the day began after rolling out of a warm, cushioned bed soon after sunup. This was followed by a leisurely breakfast in a cozy kitchen, excited preparation of tackle and gear, and finally the drive to the trout stream. Thus this red letter day on anglers' calendars had begun.

In contrast, I awoke to the noise of a lurking creature prowling near my camp in the forest. My cushion was a granite rock and my covering was a sleeping bag with a coat of snow on it. The sun had not yet risen above Salt Pond Mountain to the east. Stars twinkled in the deep blue sky. It was so quiet you could almost hear them. I ate my breakfast while sitting on a cold rock on top of a cold 3000-foot-high mountain, and I drank cold orange juice. My gear was on my backpack and needed only the snow brushed off it. Instead of driving, I hiked over a mile down a steep mountainside to my chosen stream. I was at my hot spot before most people had finished their eggs.

Despite the small discomforts, I gained a great deal of satisfaction from my campout. High on a rocky outcrop I was surrounded by the wilderness. The view of the valley and the opposite mountains was in itself worth the time and trouble of the backpack up. The surprise snowfall had not hit the valley below. So most people had no idea snow had fallen on that April morning.

I was not alone in my secret though. Two partners,

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Clark Boyer from Ohio and Maury Duncan from Norfolk, accompanied me. All of us were students at Virginia Tech, but our thoughts were far from studies that weekend.

Long before trout season we had scouted the full length of Big Stony Creek and chosen our hot spot for opening day. Wanting to experience a real adventure, we had chosen for our campsite a rocky outcropping on Peters Mountain high above the stream. Opening eve we backpacked up there and made camp.

This area is in the Jefferson National Forest adjacent to the West Virginia boundary. Big Stony is the first sizable stream east of the state line. As a matter of fact, the state line was a short hour's hike from our campsite.

The limit on trout is six per day, and we planned to bring our catch back up the mountain that evening and have a true-to-goodness meal of campfire rainbows. In my humble opinion, this fish is the best tasting in the state. Stocked liberally, hatchery-reared trout provide a fine fishing experience. Many purists shun the opening-day crowds and hold their patience until the traffic clears. And traffic on opening day on the small road that meanders alongside the stream can be compared to downtown Richmond at five in the afternoon. By 11:00, cars were bumper to bumper from one end of Stony Creek road to the other.

Nevertheless, it is still an enticing challenge to try to catch your limit with all the ensuing competition. It's a race to get to your chosen spot before someone else does. After the pools are finally surrounded there is constant discussion among the anglers over tackle, bait and tactics. For many, opening day is their only day of trout fishing, and the air of excitement is indescribable. Hardly anyone goes home without one trout or more. Many fill their limit.

The size of the trout stocked in Stony Creek is 12



From the left: Littlefield, Boyer and Duncan with their opening day catch.

to 14 inches, but a few two-to-four pounders are caught by lucky anglers. Rainbows, brook and brown trout are all stocked in this stream—rainbows being by far in the majority.

Jeff Littlefield of Glen Allen, Virginia, another partner, had arranged to meet us at the hot spot around 9:00 a.m. Jeff couldn't manage to get out of classes soon enough to join us in the hike to camp. So he had elected to meet us on the stream on opening day.

By 1:00 p.m., the four of us had caught 10 rainbow trout from the pool I mentioned at the start of my article. We figured that number was enough for a cook-out, and so after quickly cleaning them we made the long uphill hike back to camp. After making a fire with dry chestnut wood, it was not long before we had our feast prepared. We gazed over the valley below while dining on delicious pink-fleshed rainbows.

When we came down with our gear at 4 p.m. that evening, a large percentage of the fishermen were gone. Only the die-hards remained. It is a fact that once the pools with their hundreds of trout are worked over, most anglers leave. That leaves the most enjoyable fishing of the day to the flycaster. As darkness nears, the remaining trout rise to feed on the surface of the placid pools and will readily take a fly when placed just right.

The most pleasurable moment of our whole day revolved around a small boy and probably his first fly-fishing. On the way out we paused at our hot spot to see what remained of the hundred or so trout that were there earlier in the day. A camper was parked near the pool, and only the small boy was fishing while his kinsfolk's voices drifted from inside the camper. We saddled up behind the young angler to watch. He saw us but kept right on fishing; nobody was going to take his spot, by golly.

As we watched, a trout surfaced near the middle of the pool. A small dimple on the still water was its only sign. But the young boy pinpointed the spot, and after several cumbersome tries with his long flyrod, he dropped the fly right on the spot where the trout had surfaced. Immediately there was a flash as the rainbow struck. With a shout of delight the boy fought his prize to the bank. Fighting back his pride, the boy cast us a sidelong glance as he scampered by us on his way to the camper to display his catch.

We then moved in to try our luck, but we were skunked. But we left with a contented feeling that there was one more outdoorsman growing up in this world.

If you plan to make a trip to the Big Stony, here is a helpful hint of advice. Bring along some jarred minnows. After the first 20 minutes on opening day the trout disregard salmon eggs but will readily strike the minnows.

A flyrod is the traditional trout tackle, but if you can't handle one well, a spinning outfit will work just as well on these opening day Stony Creek rainbows.

VIRGINIA'S BARRIER ISLANDS

Last link in a fragile chain

By CURTIS J. BADGER
Onley



STRETCHING along the Atlantic like mile-long fingers of sand, Virginia's barrier islands are among the few remaining undeveloped island chains on the mid-Atlantic coast.

The islands today remain much as they have been for hundreds of years. The powerful ocean swells strike unimpeded at the islands, exploding with a constant, tumultuous din upon the sand, sending their white-laced froth landward toward the dunes. The roar is accented by the shrill cry of sea birds which race back and forth along the water's edge and soar above the currents in search of food. The islands are magnificent places.

There is something about an island that fires the imagination and brings out the romantic, even in the most pragmatic of personalities. These islands are no exception; perhaps it is their timelessness. Visiting one of the islands, one has the feeling of stepping out of the 20th century. There is no telephone, no electricity—none of the concrete and steel trappings which modern man has wrapped himself in. One almost expects to see Blackbeard himself emerge from the morning mist with a trunk of freshly pirated loot.

Through the years the islands have become the focal point of many local legends, many of them dealing with pirates and tales of buried treasure. Rogue Island in Northampton County reportedly received its name from being the hiding place of Blackbeard and his band. Although no one has uncovered a fortune in pirates' treasure lately, occasional finds of old Portuguese, Spanish, and English coins keep the legends alive.

Perhaps the best-known island legend deals with a Spanish galleon loaded with ponies which sank off Assateague Island in the early 16th century. The ponies that survived the wreck swam to Assateague and Chincoteague Islands where their descendants remain today. This legend gave rise to the famed Chincoteague Pony

Penning celebration, where each July local volunteer firemen round up ponies on Assateague and swim them to nearby Chincoteague where they are auctioned at the Firemen's Carnival.

Today Assateague is a National Wildlife Refuge and National Seashore. Of the 13 barrier islands, only Assateague, Wallops, and Fisherman can be reached by car. The remainder can be reached only by boat.

Assateague is the northernmost island in the Virginia chain, and it is the largest. Since the island became a part of the Department of Interior refuge system in the 1960's, thousands of people have visited the island to observe the abundant wildlife and swim and fish along the oceanfront.

The refuge boasts an abundance of bird life; over 275 kinds have been identified. In the summer, sandpipers, plovers, curlews, egrets, herons and a variety of terns can be seen. During the winter months, many varieties of ducks, Canada geese and snow geese congregate on the leeward marsh areas of the island.

South of Assateague is Wallops Island, a National Aeronautics and Space Administration rocket launching and experimentation facility. South of Wallops are Assawoman, Metomkin, Cedar, and Parramore Islands in Accomack County. In Northampton County, from north to south, the islands are Hog, Cobb, Wreck, Ship Shoal, Myrtle, Smith and Fisherman. The latter is a federal wildlife refuge and is the northern terminus of the Chesapeake Bay Bridge-Tunnel.

For the most part, the islands are a mass of constantly shifting sand, held tenuously together by sparse stands of beach grass and bay myrtle. The islands are constantly in a state of change. The waves, breaking obliquely upon the beach, carry sand, particle by particle, in a never-ending littoral drift. The winds, too, play upon the face of the islands, building dunes here and erasing them there. The changes are usually gradual, but at times can be abrupt. During hurricanes and

severe storms, the effects of nature are magnified, and within hours the islands can be drastically altered. Old inlets can be closed and new ones opened, and areas which were once far from the ocean can suddenly become inundated.

In this manner the islands act as a great series of geologic shock absorbers for the mainland Eastern Shore. The energy they absorb daily from the pounding Atlantic is astounding. The barrier islands are the geographical bodyguard of coastal Virginia.

The islands also serve as protectors of one of the most prolific saltwater breeding grounds on the East Coast. Between the narrow islands and the mainland lie great expanses of biologically rich salt marsh, laced by tidal channels meandering through the marsh in intricate, convoluted patterns.

This area where the land meets the sea is one of the richest eco-systems in the world. From early spring to late fall, fish and shellfish are abundant in the area, providing sportsmen with many hours of pleasure and providing the commercial fishermen of the Eastern Shore communities with a dependable livelihood.

Flounder, spot, trout, mullet, rockfish, clams, crabs, oysters and many other varieties of saltwater fare spend at least a part of their lives in these estuaries.

In the winter the marsh areas offer shelter and food for thousands of migratory birds. Some of the best duck and goose hunting in the state can be found in these coastal expanses. The rich aquatic life of the marsh provides excellent feeding grounds for shore birds and waterfowl; many varieties find the thick growth of shrubs along the backdunes of the islands excellent, undisturbed breeding grounds.

The hand of man has thus far touched these fragile systems lightly. In the mid-1800's a small settlement flourished briefly on Cobb Island, but the encroaching sea slowly chased the island dwellers to the higher grounds of the mainland. In the early 1900's a similar community began on Hog Island, but a severe storm in 1933 created a mass exodus to the mainland.



The north end of Cedar Island at Metomkin Inlet.

MARCH, 1974



Wild ponies on Assateague Island, the most famous of Virginia's barrier islands.

Today there are still developers and realtors who envision strings of resort hotels and high-rise condominiums lining the beachfront. But, luckily, these drawing-board dreams have not materialized. The reason is probably due to the unstable nature of the islands themselves, and to the efforts of The Nature Conservancy, an Arlington-based land conservation organization.

Several years ago, promoters were planning the construction of several thousand family dwellings, hotels, convention facilities, marinas, an airport and an access causeway to the mainland on Smith Island. The Conservancy, however, has since purchased the island and plans to keep it in its natural state. The Conservancy also owns Myrtle, Ship Shoal, Godwin and most of Hog Island. Last summer they successfully completed negotiations for Parramore Island, one of the largest and most desirable of the islands in the barrier chain. Through a process of checkerboarding, the Conservancy hopes to prevent damaging commercial development and the construction of coastal causeways along the island chain.

There are only a handful of islands that now remain in private hands. Cobb is the only barrier island in Northampton county that remains privately owned. In Accomack county only Assawoman, Metomkin and Cedar Islands are private. Cedar Island was subdivided several years ago and lots were sold, but only a few cabins have been built. The problems of ferrying building materials to the lot sites, coupled with the expense of installing proper waste treatment and water facilities, have discouraged many would-be builders. Cedar Island does, however, have its share of summer visitors.

These islands are special places and should be treated as such. Their leeward marshes and creeks provide sportsmen with unparalleled fishing and hunting. Their estuaries are the breeding ground of fish and shellfish which contribute greatly to the local economy. And the entire island system provides a rich, aesthetically rewarding environment for all who can admire the wonders of nature without abusing them.



TREE FROGS

HARBINGERS OF SPRING

By BRANLEY ALLAN BRANSON
Richmond, Kentucky

Green Tree Frog
Commission photo by Kesteloo

STRAIGHT out of my hand leaped the small gray tree frog, promptly attaching itself with its toe suction cups to the peeling paint of a vertical wall. It tucked its legs beneath the mottled body, as if it were trying to look as inconspicuous as possible. I retrieved it without trouble. Next, I opened my hand about a foot away from a wire cable, and again the small frog leaped. Only two toes touched the wire, but that was enough. The toe pads held, and the frog swung itself onto the cable and assumed the protective crouch. Tree frogs have an amazing depth perception.

It was a cool morning, but not so cold as it had been the night before when I had captured the tree frog. Early every spring, almost as soon as the frost is off the ground, as soon as the first spring rains begin to produce small woodland puddles and pools, tree frogs make their way to them—males first, whistling, croaking, chirping, then the females—to mate and deposit their eggs. In fact, one of the earliest signs that spring is a reality is the high-pitched chirping of the spring peeper, *Hyla crucifer*.

Obviously, frogs which spend most of their time in trees must possess specialized skeletons and body parts. The backbone, for example, has vertebrae that are concave at the front end and convex behind; a shock-absorbing modification, then. The tips of the toe bones are expanded to support the suction cups, and the rest of the toe bones have disks of cartilage between them to allow the kind of flexibility jumping from limb to limb requires. However, not all tree frogs have retained these characteristics; some have secondarily forsaken an arboreal life to reinstate terrestrial habitats. An example of this is seen in the Mexican burrowing tree frog, *Pterohyla foudens*. As its name implies, this odd frog excavates small holes, using its head to seal off the entryway.

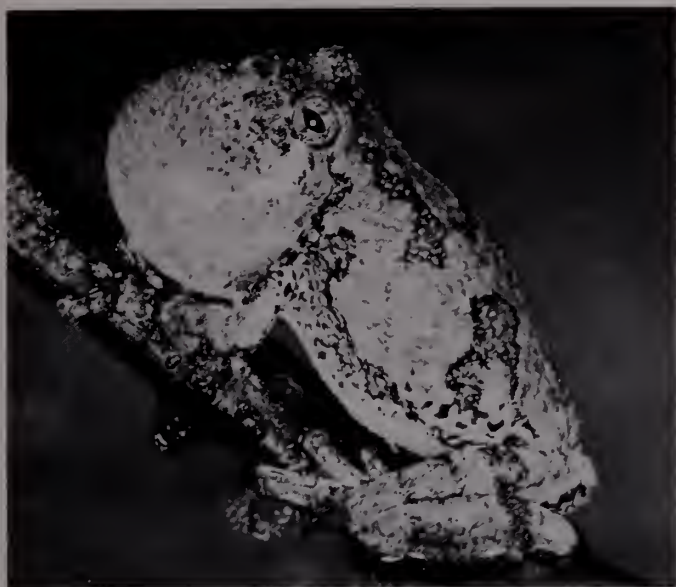
Even in the United States, however, not all members of the tree frog family (Hylidae) are arboreal. *Acris crepitans*, the common cricket frog of roadside ditches and small ponds (the background noise in many moving pictures set in the southern United States), a tiny shade-loving frog scarcely an inch and one-half long, looks more like a diminutive bullfrog than anything. It has rough skin that is colored greenish-brown with grayish or reddish-brown blotches, thus is nearly perfectly concealed by its habitat. I have caught these frogs moving about beneath a surface covering of ice, so their activity spans a good part of the year. *Acris* can also run and jump from the surface of the water, sometimes for as far as three feet.

Despite their abundance, such terrestrial tree frogs excite little curiosity, primarily because of their extreme shyness. The most secretive of all are the chorus frogs (*Pseudacris*). Living in the vicinity of marshes, wet roadside ditches, and bogs, these tiny frogs ($\frac{3}{4}$ to $1\frac{1}{4}$ inches) spend most of the year in hiding, emerging to breed with the coming of the first cold spring rains. Most species are grayish to olive with dark longitudinal lines or stripes, and nearly all of them have grinding, raucous calls.

For most of the remaining several hundred species of tree frogs, however, much of their world consists of limbs and insect-hunting. Because there are so many kinds of them—primarily distributed in tropical regions—it is impossible to discuss all members of the family. Here are some representative North American species.

Distributed in swamplands from Virginia to Texas and up the Mississippi valley to Illinois and Missouri, the green tree frog (*Hyla cinerea*) lives on broadleaved plants, often hiding beneath clumps of Spanish moss. At eventide, a visitor to such areas may be startled by a sudden very loud "quonk" as the first of these bright-

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Hyla versicolor

N.A.S. photo by Maslowski

green frogs emerges for its nightly singing; shortly, however, that first individual will be joined by thousands of singing partners, and the noise will become deafening. Up close, the frog is very slim and smooth and, upon scrutiny, has a few golden flecks on the body and a white stripe on the head. *Hyla cinerea*, proportionally, is the longest-legged frog in the world, and it uses them to good advantage. I have measured single leaps of over four feet, or roughly 24 times the length of the frog's body.

In the Pacific drainage of British Columbia to Baja California and inland to Montana and Arizona lives a small, delicate tree frog, *Hyla regilla*. It has all the modifications for arboreal life; however, it spends most of its time on the ground around streams and springs. The species is easily identified by the dark Y-shaped mark between the eyes and by the black, diagonal bar behind each eye. Much of the literature on this species describes it as being green. However, when caught and kept in the dark the frog becomes nearly black, so *Hyla regilla* can vary between black and green.

Many tree frogs are quite adaptable, i.e., when trees are not available, they press their abilities into use for a different kind of life. Once my wife and I were scaling the 1,000-foot, vertical walls of Clear Creek Canyon in southern Arizona. There were many small cracks and crevices in the wall and—it then being the rainy season—nearly all of them had a Pacific tree frog hiding therein. I frightened one frog from his hiding place, and it jumped out into open space. I expected to look down and find the poor little creature splattered over the rocks at the bottom, but instead it caught the wall a few feet below and was still there when we passed.

In many ways, the most common tree frog in North America has some very uncommon attributes. *Hyla versicolor* is able to live in many kinds of habitats from Maine, southern Canada and southward to the Gulf

Coast. I have found them in Central Park and in Chicago. Once, a large group of them called so loudly that an outdoor graduation speaker had to pause until a large chorus of them stopped singing.

The specific name "*versicolor*" refers to their remarkable ability to change color, according to environmental surroundings. On a tree trunk, the frog is easily mistaken for a bit of lichen, whereas in green vegetation the frog assumes a dull greenish coloration. Regardless of its over-all color, however, the groin is always bright yellow to orange. This "flash" patch supposedly serves the species as a warning color, i.e., when one frog "flashes" nearby fellow frogs are warned of impending danger. The patch may also serve to startle a would-be predator. When startled itself, *versicolor* can jump long distances. Furthermore, it needs only to touch a few toes to a prospective landing site for becoming adhered to it—an obvious modification of great benefit in escaping predators.

Tree frogs are great hunters, capturing insects with their long, sticky tongues with a burst of speed too fast to follow with the eye. Often, the attack ends with the tiny predator tackling a large cicada which must be held for an hour or more—until all signs of struggle have ended—before the prey can be swallowed. When stalking crawling insects, only the golden-flecked eyes move; then the tongue strikes.

Success in hunting, however, brings some peril. Pesticides—particularly chlorinated hydrocarbons—do not always kill insects. Instead, these noxious chemicals are progressively accumulated by tree frogs when they eat contaminated prey until lethal levels are reached, then death of an unintended victim follows swiftly. Such tragedies remind me that, despite their many mechanisms for survival, all things in nature are, after all, susceptible to the long reach of man.



Hyla andersoni—pine barrens tree frog.

TRANSPORTATION AND THE ENVIRONMENT

STUART P. DAVEY

*U.S. Bureau of Outdoor Recreation
Washington, D.C.*

IN light of the current energy crisis and our need to reevaluate our national transportation priorities, this article, condensed from a paper presented at the 13th Annual Fontana Conservation Roundup held at Fontana Village, North Carolina, in 1972, seems almost prophetic. Stuart Davey served on the staff of the Virginia Game Commission between the years of 1953 and 1961 as a game biologist and finally as administrative assistant before leaving to accept employment with the Federal Government.

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One of the classic environmental confrontations of our time is that of highways versus preservation of the environment. I say classic because I believe it has all the elements—the behavior of man and his travels; the impact of roadways on resources and on future developments; the role of government in stimulating necessary research, education, and development related to highways; the reaction of people as their territorial interests become increasingly threatened; and finally, the role of government and the courts and judicial system to compromise the situation.

I believe it can be safely assumed that early trails, and even wagon or post roads, caused few environmental controversies, or even disgruntled landowners, since lands and space were pretty much in surplus.

Largely a single purpose program even today, and surely more so 15 years ago, highway rights-of-way were pushed through rapidly, with little or no public response invited.

- Straight line rights-of-way were cut through country *and* city much to the discontent of the people in their paths;
- fish and wildlife interests resented the loss of wetlands, streams and upland habitat, which were often the paths of least resistance—or happened to lie on the straight line—the cheapest overall for the motorist and road builder;
- parks and recreation areas were cut, or diminished, by the routes or even used as corridors for the route rather than displace people and businesses;
- paved highways were soon built to the border of cities, public lands or valuable resources, like a pistol to the head while all concerned seemingly shrugged their shoulders in resignation.

In response to this highway planning expediency, people soon became reactionary and forced some modi-

fications, but now it became a case of “too little—too late.”

Briefly, the procedures today require the initiating Federal agency to draft an environmental statement, in cooperation with others, and ask for comments from all concerned levels of government. Such comments may necessitate changes in the project and/or statement, and the final statement has to include these comments from others, as an appendix. This effort is designed to ensure that all environmental considerations are given careful attention and appropriate weight in all decisions in the total effort to protect and enhance the Nation's environment.

Obviously, environmental impact remains and constant vigilance must be the price of all “environmentalists,” a term unfortunately used to describe those who do care about the effects of massive construction projects.

In effect, the automobile loving public, the manufacturers, and the road builders have created a self-feeding system which no one can or even dares to stop, so long as situation A brings demand for situation B, then to C and back to A—all the while contributing to a very large piece of the nation's economic action.

I agree 100 percent with the highway administrators that the public *prefers* a personal automobile ride, and, therefore, he will use his personal automobile. However, in most cases, the public has no alternative, and therefore *must* use the automobile.

The public, especially the urban public, *must* have alternative ways to commute to work, to shop, to vacation, *without* using an automobile. All the arguments *for* highways are true so long as you avoid this point and use the “give the public what they want” philosophy. I shudder every time I watch thousands of autos, each a tremendous individual investment, stack up by the mile, all idly burning gasoline and for what purpose—just a bunch of commuters trying to get to or from work.

If the true costs of the devotion of the American public to the automobile were faced, other forms of conveyance surely would appear reasonable in cost or become free.

In other words, let's continue the fight in environmental confrontations using the tools developed, but that stance alone will never solve the problems. We should fight for an alternative to the thought “. . . the road must go through.” In many cases, it doesn't have to.

* * * * *

The Fifteenth Annual Fontana Conservation Roundup will be held May 15-17, 1974, again at Fontana Village, North Carolina. Its theme will be “Environmental Tradeoffs.” Persons interested in attending sessions should write Robert L. Sloan, Fontana Village, Fontana Dam, N. C. 28733 for details.

VIRGINIA WILDLIFE



Subjects To Be Taught

GEOLOGY—The origin and nature of the earth's crust; the forces at work to alter the crust, to form mineral deposits; the origin and nature of mineral deposits, with examples from Virginia's mineral resources; surface water and ground water as they work to break down and modify the earth's crust through weathering and erosion, and also water as it pertains to the needs of man.

MARINE LIFE—Description of the marine environment with its typical organisms, action and resultant problems in relation to the field of conservation.

SOIL AND WATER—The parts of soil and their importance; how soil contributes to plant growth; the relation of soil to the parent material from which it was formed; the soil profile and its characteristics; and the program for conserving Virginia's soil and water resources.

Small watershed development; use of soil for storing water; and related water management principles.

To apply for enrollment in this course, check the college of your choice, tear off this coupon and mail to: Virginia Resource-Use Education Council, c/o E. W. Mundie, Seitz Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. Be sure to mark the college of your choice.

I am interested in the Natural Resource Course
offered at:

☐

Virginia Polytechnic Institute and State University. June 17–July 3, 1974

☐

Madison College
July 8–July 26, 1974

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Virginia State College
July 15–August 2, 1974

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The College of William and Mary
June 22–August 9, 1974

A COURSE FOR TEACHERS ON VIRGINIA'S NATURAL RESOURCES

Credits

3 semester hours

or

5 quarter hours

FORESTS—Forest conservation as it relates to the management of timbered areas; use of the forest as a source of raw material for the wood-using industries for soil stabilization, for watershed protection, and for recreation.

WILDLIFE—Characteristics of animal populations, including fish, that are of importance to man's use of this resource; relation of animals to soil, water, and forest, and the relations of these four basic natural resources to man and his welfare.

Scholarships

A limited number of scholarships to cover tuition, meals, and lodging will be available to Virginia school teachers from funds provided by several interested organizations. All Virginia school teachers are eligible to apply. In order for a scholarship application to be considered, it must be received by May 1, 1974.

Date _____

Name _____

Address _____

I should like to apply for one of the scholarships. Please send me the necessary forms.

Signature of Applicant _____

DUCKS UNLIMITED



IN ACTION

OAK Hammock Marsh is typical of the many Ducks Unlimited projects which put contributions from Stateside waterfowlers to work enhancing duck habitat in Canada where it is most productive. This particular project is being financed by contributions from the Virginia D.U. Chapter and dedicated to the memory of Richmonder Beverly Randolph Tucker. Tucker was an ardent waterfowl hunter and an outstanding conservationist, so this living memorial is most fitting. He had a great love for the Canadian countryside and journeyed there at least 30 times during his lifetime to hunt, fish and enjoy this remote region.

The Oak Hammock Marsh Project is within a short drive from Winnipeg—the capital city of the Province of Manitoba—and is easily accessible. The area has become a very popular attraction for both waterfowl and man, and is most assuredly a project of which Virginians can be justifiably proud.

For many years the Oak Hammock Marsh, or St. Andrews Bog as it is sometimes called, had been recognized for its high wildlife management potential. Agricultural encroachment, with accompanying drainage, was only partially successful on this treeless, flat, wet meadow. The 150 acres of permanent marsh habitat that once existed were further restricted in waterfowl production due to spring burning and tillage.

In mid-1972, the Province of Manitoba, who now own the land on which the project is located, and Ducks Unlimited (Canada) entered into a joint agreement to develop the Oak Hammock Marsh as a wildlife refuge, management and nature study area. The area has in fact been officially designated as THE OAK HAM-

MOCK MARSH WILDLIFE MANAGEMENT AREA, and will ultimately include an interpretive center, constructed by the Provincial government, complete with building and lookout station.

Ducks Unlimited constructed most of the dikes, control structures, and sixty large internal nesting islands. The Province of Manitoba purchased the land for the development, provided engineering technology, and constructed the water supply system which includes several wells to supplement spring run-off.

Though many duck species are expected to nest at Oak Hammock, mallards and pintails are likely to predominate. Extensive use of the nesting islands is anticipated by ducks and Canada geese once vegetation is established. The islands, in addition to creating nesting sites, provide good protection against predators.

Ducks Unlimited funding for long range conservation projects can continue only with real public appreciation of conservation values and recognition of waterfowl as one of the continent's great wildlife resources.



CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

LARGEMOUTH LED THE LIST of over 1500 freshwater fish citations issued to lucky anglers by the Commission of Game and Inland Fisheries during 1973. Citations were presented to over 300 fishermen who caught largemouth bass weighing more than the eight-pound citation limit. The largest bass this year was a 12 pounder caught by H. D. Kennedy of Newport News. This was not a record fish, but plenty of state records were broken this past angling season. B. L. Crutchfield is now the state's champion striped bass catcher with his 34 pounder pulled from Buggs Island this past May. Only slightly smaller was the 30 pound channel cat caught by R. Underwood in Smith Mountain Lake in June. We also have a new pickerel record which is held by H. R. Evins of Norfolk for the 8-pound 4-ounce fish he boated in Lake Gaston in October. In August R. G. Barrett pulled a walleye out of the New River and landed a new state record. The 22-pound 8-ounce fish is only 2½ pounds under the world record for this species. Other new records include P. Fuqua of Vinton who caught a 31-pound muskellunge in Smith Mountain Lake, S. G. Turner for his Kentucky bass, a 5-pound 12-ounce specimen from Claytor Lake, and O. G. Burkholder, who caught the record 4-pound 2-ounce brook trout last November in Back Creek.

ALL-TIME RECORD DEER HARVEST IS REPORTED in recently released figures for the 1973-74 Virginia hunting season. During the season, hunters took 60,565 deer, an increase of 11,790 over the previous season and significantly more than in any previous Virginia deer hunting season. The increased total was partly due to liberalized doe hunting seasons in some eastern counties. About six thousand more does were taken this past season east of the Blue Ridge. This increased harvest will help alleviate crop damage and damage to the deer range that might be caused by higher deer populations. Does harvested did not account for the entire increase, however, as the buck kill was up substantially statewide.

CAMPERS OUT ON MARCH 22 as state-operated campgrounds open for the 1974 season. The State Department of Conservation and Economic Development has set this date (at 4 p.m.) and announced that reservations may be made beginning February 1 at any of 44 Ticketron terminals in the commonwealth or by writing to the Virginia State Parks Reservation System, Ticketron, Box 62284, Virginia Beach, Virginia 23462. This season, two additional areas will be available to campers, a 30-acre site at Natural Tunnel State Park in Scott County and Goodwin Lake State Park which is located near Burkeville in Prince Edward County.

MORE PROTECTION FOR ENDANGERED SPECIES is provided with passage of the Endangered Species Act. Signed into law on December 28, the law provides, among other things, federal protection for threatened species as well as endangered species.



WOOD DUCKS



GREENWING TEAL

WATERFOWL

by Jerry Ellis

This series of waterfowl paintings was rendered in tempera and water color by Richmond artist Jerry Ellis. All the birds are portrayed as they appear during the late fall and winter in typical Virginia settings. These unsold originals are in color and are 19 by 24 in size, except the Canada Goose scene which is larger.

Ellis is originally from Newport News and taught art before striking out as a free-lance illustrator. Persons interested in purchasing originals may contact the artist at 226-8461 in Richmond. Prints are not available.

PINTAILS

MALLARDS





CANADA GESE

REDHEADS



CANVASBACK

SAVE THAT BATTERED ROD

By PAUL R. KUGLER

Annandale



Start of the wrapping process. Note how start of thread is wrapped over by succeeding windings around pole. In this photo the successive windings are spread out to illustrate technique.

DO you have an old fishing rod in your attic? Is your present rod getting shopworn? For just a few dollars outlay and several evenings of your time you can restore these rods to like new condition. With the increase in price of bamboo rods you may have a treasure just sitting there and not know it.

Six months ago my father-in-law gave me an old bamboo rod that was built in the early 1920's. The bamboo was warped, all the varnish had crystallized, one ferrule was split and the others corroded, the cement holding the rod seat in place had turned to powder, and all of the wrapping thread was rotted and falling off the rod. This was the most hopeless rod I had ever seen. It was so bad that I put it away in my basement and forgot about it until after the early trout season was over.

One evening I decided to take a closer look at the rod. I tested each section to see if the bamboo still retained any life. The test is quite simple: just flex the bamboo and if it returns to its original position quickly, the bamboo is good. To my surprise the rod felt as resilient as some new bamboo rods I have tested. Now that I knew the bamboo was in good condition, my decision was to proceed with refinishing. Fortunately this rod is a good subject for this article as it needed everything fixed. If you want to repair a fiber glass rod the process is easier, and starts and ends with rewrapping the line guides.

After testing to determine the condition of the wood, my next step was to take a piece of paper the length of each rod section, lay a rod section on the paper and mark exactly where each of the line guides was originally mounted. This assures a return to the original level of performance by making sure that each line guide is remounted in its original position. Once this record has been made, proceed to remove all line guides

that need rewrapping or replacing. In the case of this rod I removed everything!

All of the ferrules were removed as well, because the glue had ceased holding. It was necessary to replace the broken ferrule, as well as its mate. Because of the age of this rod I could not find anyone locally who carried a comparable ferrule in stock. Fortunately, I tried my friends at the Orvis Company in Man-



Tidy appearance results when each successive winding is tight against previous winding.

chester, Vermont. They asked me to send in both the male and female parts of the damaged ferrule. If they do not have the part in stock they will custom make one to the exact specification required. Within a week I had my new ferrule and also a new reel seat which needed replacing. Orvis can provide just about any part that you need to repair your rod, and you can be sure that the parts will be of the highest quality.

While waiting for the parts to come in the mail I scraped off all the varnish until only bare sections of the rod remained. For this task I found that a sharp pocket knife did the best job. Hold the blade perpendicular to the surface to be scraped, and chip off the old varnish by sliding the blade along the surface. Do not use a cutting motion. Once you have scraped off the old varnish, use some fine steel wool to sand each section of the rod smooth.

If your bamboo rod is warped, it can be easily straightened. Place some water in a saucepan and heat

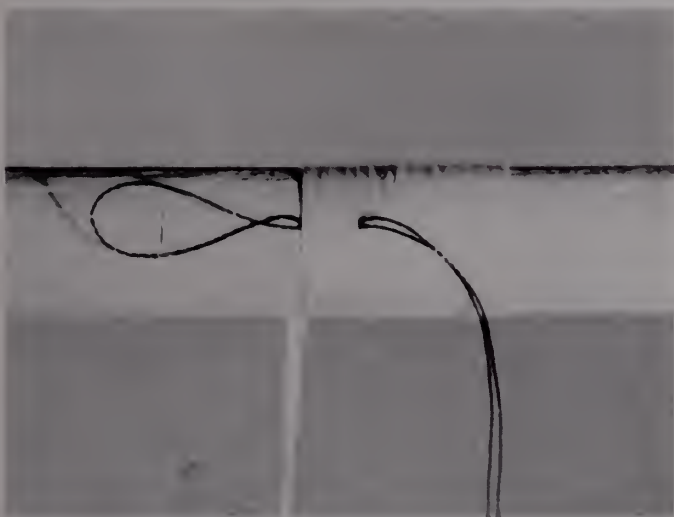
VIRGINIA WILDLIFE

to a boil. Hold the warped portion of the rod over the pan in the hot steam for about 30 to 45 seconds. Remove from the heat and lightly bend in the opposite direction from the warp. Repeat this process until the warp is completely removed.

At this point you are ready to replace or re-glue any ferrules that need repair. I prefer to use epoxy for this purpose rather than ferrule cement. To assure that the rod is perfectly straight, I join the male and female parts of the ferrule together and test fit each section so the rod is complete. Once everything is lined up by eye, I mix up enough epoxy to do one ferrule, and hold everything in line for the five minutes it takes to set up. Use Hobby Pox Formula 4 epoxy for best results. This glue is available in most hobby shops that sell model airplanes.

Now you are ready to wrap the line guides. Although there are special tools made for this purpose, I find that a simple fly-tyer's bobbin works well if you are only doing a few rods. Start wrapping the thread on the rod by laying the thread flat along the rod and then overlapping each successive winding to bind the thread to the rod. Once you have wrapped about $\frac{1}{8}$ inch tightly about the rod, place the line guide in position and wrap the thread over the flat surface of the line guide to hold it in place. It is always best to wrap line guides from the outside towards the center of the guide. This prevents a gap at the edge of the line guide.

To avoid the problem of unsightly knots, determine when you are ready to tie off the wrapping. About four turns before that point, lay a loop of thread across the wrapping and wrap four more turns as if the loop of thread were not there. Once you have reached the point that you want to stop wrapping, simply cut the thread and insert the cut end through the remaining loop. Pull the loose ends of the thread that forms the loop, and you will pull the loose end of the wrapping



Start of process to terminate wrapping. Loop of black thread is placed in position along rod.

MARCH, 1974



Make three or four additional windings right over black thread.



On last winding insert winding thread through loop in black thread and pull everything tight. Note how thread is pulled through under the last three windings around rod. Trim with a razor blade.

thread under the last four wraps around the rod. The end of the wrapping thread is then held in place by the last four windings around the rod. Trim off any thread flush with the end of the rod wrapping for an invisible and secure knot. During this process, be sure that the line guides line up for smooth line action.

When the line guides are all attached to the rod, apply two coats of color preserver to the wrapping material, allowing each coat to dry overnight. The last step is to apply two coats of varnish. Flow on the varnish to avoid any bubbles in the finish. Allow to thoroughly dry between coats. When this task is finished, you have a rod as good as or better than new. The total cost of rebuilding my bamboo rod with two tips was \$8.75.

Fiber glass rods are much easier to rebuild, and they can often be done in one or two evenings. Somehow fishing does seem to be more satisfying with a rod you have rebuilt yourself.

SOME nature lovers realize that however beautiful a rural or suburban home may be, with spacious grounds and gardens, it will not necessarily attract and hold birds and other wildlife. Why? Simply because animals, like people, must first seek a dependable livelihood—food, water, safe nesting places and natural protection against predators, all of which “spells” wildlife habitat.

The well-worn expression “that’s for the birds” does not necessarily apply to modern home grounds planned mostly for humans, with little or no provision or thought for the attraction of our feathered friends.

Man-made bird feeders and nesting boxes, although ornamental, are often more attractive to people than to wildlife, and make a poor substitute for the wide variety of food that nature provides when given the chance.

Strangely enough, the gulf between man-made wildlife habitat and more natural surroundings began to widen on modern farms, and “clean farming” methods necessarily deprived wildlife of their natural sustenance and protection.

Later it became noticeable on large suburban home grounds, when modern power mowers transformed ideal hiding places into quantities of compost, which is fine for the garden but just not made for the birds!

Fortunately these adverse conditions may be corrected before it is too late, rendering handsome homes more attractive and safer for birds and other forms of wildlife.

It is not necessary that home grounds become unsightly in order to supply food and cover for wildlife. Certain cover crops that produce grains and various kinds of seeds that birds relish and thrive on, may be sown on the outer areas of large country and suburban estates for game food patches. Far from being unsightly, they are usually well planned with thought given to both appearance and the attraction and protection of wildlife.

Yes, it is possible to improve habitat and food conditions on large home grounds, and it is being done every day. Another natural way to entice and hold wildlife on suburban home grounds is to plant trees, shrubs and

Your Yard Can Be

And Attractive to Wildlife

By ARTHUR ANNESLEY DUGDALE
Ashland

ornamental vines that provide food, cover and protection, including safe nesting places.

Birds and other small wildlife soon learn that humans will not harm them where food and water is provided just for them. They seem to “spread the word,” and soon you will have quite a list of “free boarders!”

It is easy to apply the same forethought and planning to smaller home grounds, on a smaller scale, making them ideal for modern outdoor living—beautiful yet equally proficient in providing an attractive habitat for birds and other small wildlife.

However, it is important to work strictly to a plan to attain the above goals, even if your guide is only a rough pencil sketch. Eliminate plant material that is not hardy in our climate and would require considerable maintenance.

Prepare a plant list comprised of specimens that provide both beauty and fruits (berries) at different seasons, including berries, pollen, tender buds and new growth, and insects that are attracted by these plants.

Thanks to our white pine (*Pinus Strobus*) trees near the house, we discovered that during June in Virginia, quail feed on the pollen as it ripens. Our setters, in their adjacent yard, see the quail feeding in pine trees and can hardly believe their eyes! These birds also come to the flower beds at the house and feast on the ripening pansy seeds and other goodies, in late spring and summer.

What isn’t so easily seen is that quail also feed on certain insects with relish—another reason why gardeners like to have them visit their gardens!

Among ornamental trees and shrubs that provide food and protection for birds are flowering crab, flowering cherry, hawthorn (wild apple), female American holly (*Ilex opaca*), and the staghorn and smooth sumacs. Others are wild plum, red cedar (*Juniperus virginiana*), sweet birch, yellow birch, and mountain ash. The foregoing list is by no means complete.

In planting trees and shrubs for wildlife, choose varieties that ripen fruits at different seasons, especially during fall and winter months when bird food is not so plentiful. In choosing species of trees and shrubs, select kinds that also afford bright fall foliage in addition to foods, for beauty’s sake.

Pine grosbeak by
Leonard Lee Rue III.

VIRGINIA WILDLIFE



Beautiful

at the Same time

Dogwood is a perfect wildlife food plant for suburban lots featuring beautiful flowers, edible fruits and controlled growth.

Commission photo by Kesteloo

The lowly sassafras is listed among the small trees that produce food for wildlife, and it also sports an autumnal "coat of many colors." Both sumacs and sassafras are well used on suburban home grounds to soften the sudden transition from lawn or garden to the orchard or vegetable garden. Locate the more ornamental flowering trees near the house.

Remember that the small-fruits garden, with grapes, raspberries, blackberries and other luscious morsels, serves as a veritable magnet to attract and hold birds, for this place is their "paradise"! So grow enough fruit for the family, friends, and for the birds too.

An important segment of ornamental plant material for bird tempting is the long list of fruit (berry) producing shrubs and small trees. A list of them from garden books names more than thirty, but we will mention some of the more desirable ones: Russian olive (*Elaeagnus angustifolia*), black and red chokeberry, *Hypericum prolificum*, *Lonicera bella* (honeysuckle), a choice hybrid, *Lonicera tatarica*, and *viburnums Opulus*, *Wrighti* and *setigerum*. Others are coralberry, snowberry, spicebush, weigela, mountain currant and high-bush blueberry.

For informal berry-bearing hedges use *Ligustrum Amoor River* (privet), *Ligustrum japonicum* (evergreen), yaupon holly (*Ilex vomitoria*), winterberry (*Ilex verticillata*), and other hollies in variety. Others are red cedar (*Juniperus virginiana*), barberry in variety and *Cotoneaster divaricata*. All the above hedge plants may well be used in groups on the lawn.

Another good informal hedge plant to induce wildlife habitation is the much abused seedling multiflora rose. In spite of its faults, it is considered one of the better varieties for an almost impenetrable tall hedge, due to its myriads of thorns. Wise birds who nest and roost in it are quite safe! In May these hedges are brightened by many single white flowers.

It is a boon to wildlife, producing an abundance of red berries (fruits) in autumn, which last well into the winter; birds relish them. But this plant can become a



pest if its seeds are dropped carelessly all over the farm, and the seedlings are allowed to grow in unwanted places. It is fine in those odd corners of the field that can't be cultivated, and excellent to plant on gully sides to check erosion.

For planting on rural properties, give preference to native trees and shrubs for naturalistic effects. The shrub roses supply food in late summer and fall, and flowers during summer months. Trees and shrubs used for naturalistic effects and to attract wildlife include red cedar, hollies, dogwood, sumac, and viburnums in variety.

Shrubs for wildlife plantings can be obtained through your District Division of Forestry office @ \$2.50 per hundred. Native trees at modest prices are also available for forest plantings.

An advantage that rural home properties have over suburban ones is they probably have space for wildlife food patches, which are often planted on the contour to check soil erosion near the pond or creek. For this purpose use a mixture compiled by a wildlife technician containing many kinds of seeds, which ripen at different times of the summer and fall. It is recommended by officials of the Virginia Commission of Game and Inland Fisheries.

This wildlife seed mixture contains brown-top, proso, foxtail and Japanese millet, Korean lespedesa, milo, dwarf Essex rape, Loreda soybeans and yellow mammoth soybeans.

Sow this mixture during April in Virginia, on prepared soil that has been fertilized and limed if needed. Although prepared for game birds, the seed patches will prove equally attractive to many songbirds and small-game animals.

Slowest Turnpike in the East

By TOM EARLES
Culpeper

IT'S not at all uncommon in Virginia to find historical significance and natural beauty in the same place. One such place is the old Gordonsville Turnpike as it winds its way through the Shenandoah National Park at Fisher's Gap.

The word *turnpike* usually evokes thoughts of multitudes of vehicles moving along a many-laned highway at high speeds. At present the old Gordonsville Turnpike is a place of such tranquility and beauty that the name seems not to fit; yet, when it was built back in 1849-1850, it was considered a major thoroughfare.

The Gordonsville Turnpike, or Blue Ridge Turnpike as it was also called, was built at a cost of \$176,000 by the Blue-Ridge Turnpike Company. It extended from Gordonsville to New Market and was an important artery for the people of Madison County and the Shenandoah Valley to get their products to the Chesapeake and Ohio Railroad at Gordonsville. In those days the toll was a rather steep price to pay—25¢ for a team every seven miles. Only \$22,659 in tolls had been collected when the Civil War came along and the state took over the road.*

Although today the turnpike is closed to vehicles, it has a great deal to offer the hiker and backpacker who will take the time to enjoy it.

One may begin hiking the turnpike at several points. Route 670 west of Syria leads directly to the boundary of the park. This road itself was once part of the turnpike. From the park boundary it is approximately five miles up to Fisher's Gap on the Skyline Drive.

The first part of the hike runs along the clear, swift Rose River lined with beautiful hemlocks and sycamores. After a while you veer away from the river and come to a series of switchbacks as you begin to climb. At this point I always feel a great deal of empathy for the mules who once pulled wagons over this road.

As one nears Fisher's Gap there are a number of short side trails which are well marked and a must if one is to appreciate the full beauty of this place. The first trail you come to leads off to the right to an old abandoned copper mine which was in operation from 1854-1856, but closed down due to the low grade of ore. Traces of copper may still be found in the Catoclin Greenstone that makes up the cliff where the mine was located. Less than a mile beyond the copper mine lie two waterfalls on the Rose River. The lower falls is unique in the way the sun's rays are reflected off the pool beneath the falls onto the rocky walls of the can-

yon. It has an almost hypnotic effect and is indeed a hard place to leave. Once you are back on the turnpike again, you soon come to a trail leading off to the left which takes you several hundred yards up to the Dark Hollow Falls which is one of the most spectacular falls in the park.

Once again you return to the turnpike and in about a mile you cross the Skyline Drive at Fisher's Gap some 2,000 feet above your starting point and are treated to a panoramic view of the Shenandoah Valley and the Allegheny Mountains to the west.

Several miles south of Fisher's Gap is Big Meadows, with camping and picnicking facilities and a fine museum and visitor's center, not to mention the beauty of the broad expanse of meadow.

From Fisher's Gap the turnpike leads on down the western slope of the Blue Ridge. It's also about five miles down this side of the mountain to the park boundary. This trail offers some beautiful views of the valley in the winter when the leaves are off the trees; and, too, since it is hiked by fewer people, it affords more opportunity for seeing wildlife. It is not uncommon to see deer, grouse, squirrels, scads of chipmunks, and occasionally a lumbering skunk who commands the right-of-way on the turnpike. An early morning hike will be certain to pay many dividends, such as the drumming grouse in spring or perhaps a wild turkey or even a bear.

If one prefers to hike up the western part of the turnpike, it may be reached by turning off U.S. 340 near Stanley and following Routes 624, 689, and 611 to the park boundary.

Certainly the Gordonsville Turnpike from the eastern to the western boundary of the Shenandoah National Park is too much of a hike for one day, particularly if the scenic side trails are to be enjoyed. But to the hiker who will give it the time, it will in turn give him a feeling of nearness to nature and a glimpse of the past. Truly, it is a trail for all seasons. The spring flowers, the fall foliage, the shady walk in summer, and the quiet beauty of winter all complement each other.

As you walk along the old Gordonsville Turnpike, ponder the thoughts of those who traveled this road over a century ago. Imagine the excitement of a small boy from a valley farm on his first trip to the market with his father: the excitement of the winding trip across the mountain and the anticipation of seeing the wondrous locomotive—the ultimate in transportation at Gordonsville. Imagine that same boy, a few years later, crossing the mountain again as part of Stonewall Jackson's army, not knowing whether he would ever see his valley home again. Finally, ponder the wisdom of man that he would now see fit to preserve this place of natural beauty for the generations to come to enjoy and to find the fulfillment that being close to nature brings.

* Figures from *A History of Madison Co.* by Dr. Claude Lindsay Yowell.



The Carpenter Frog

By JOHN W. TAYLOR

Edgewater, Maryland

RELATIVELY little is known of the carpenter frog. Highly secretive, difficult to stalk, it is also of limited range and restricted habitat. It was not discovered until 1891, when Professor Edward Cope found it near Atlantic City, New Jersey.

It has since been found at various localities on the coastal plain south to Georgia. Nearly all observations have been made in waters highly acidic, and in association with a growth of sphagnum. Such narrow habitat requirements have been the primary factor in limiting the numbers of carpenter frogs, since other, more adaptive amphibians have prospered despite man's alteration of the landscape.

This means that the establishment of natural reserves is vital if species like the carpenter frog are to be saved. Especially imperative is the preservation of unique biotic communities (such as sphagnum bogs) which, once destroyed, can never be recreated. These reserves need not be large tracts, as is often argued. An acre or two of marsh or woodland can harbor a surprising variety of natural forms.

Unfortunately, the political machinery for saving small areas does not exist, in most instances. State and

Federal conservation agencies too often find it unfeasible to administer small tracts. Steps should be taken to make more practical the establishment of small natural preserves.

Like many amphibians, the carpenter frog is best located by its voice. Its call, which sounds like a hammer hitting a nail in quick succession, has given its common name. More accurately, it resembles two carpenters hitting nails a fraction of a second apart. A chorus of them gives the impression of a whole group of workmen hammering away.

Herpetologists know of but two places in Virginia where one could hear such a chorus: the Dismal Swamp and Seashore State Park at Virginia Beach. Very possibly there are other stations in Tidewater, so far undiscovered. They occur in the Pocomoke Swamp of Maryland, just over the state line, and it is likely that a search of the likely areas on the Eastern Shore would result in further records.

The carpenter is about 2½" in length. It is striped with golden ochre on an olive-brown ground. The throat is yellow, speckled with bronze. The belly and underparts are yellowish, with blotches of rich brown.

BLOODROOT

By ELIZABETH MURRAY
Charlottesville

Illustrated by Lucile Walton

IN general, plants which are able to store up food below the surface during the winter in the form of bulbs, corms, or underground rootstocks are capable of flowering far earlier the following spring, drawing on these reserves, than those which must depend for their nourishment on the efforts of the current season. This is why so many of our first spring bloomers use such systems. One of these flowers is the delicate and attractive member of the poppy family (Papaveraceae) called bloodroot, *Sanguinaria canadensis*, which can be found flowering in our Virginia woods in late March, through April and sometimes into May.

Bloodroot grows from a thick, horizontal, underground rootstock which sends up several leaves and flower buds at regular intervals near its apex. Each leaf is wrapped around a pointed bud as it is pushed up through the ground, then the flower stalk shoots up several inches above the immature leaf and the bud opens into a beautiful, solitary, white or pinkish flower about 1½ inches across. There are 8-12 petals and 2 sepals, the latter falling off as the flower opens. Only the pistil is mature when the flower first blooms, so that insects which land on a young flower will not brush off pollen but may leave some pollen from older flowers previously visited, thus aiding cross-fertilization. There are about 20 stamens which mature later and are bright yellow and slightly pyramid-shaped. The petals are long and narrow, tapering at both ends. They are very delicate, remain closed at night and on dull days, and drop off the plant after only a few days. If the flower is picked and brought into the house, they drop off after only a few minutes while you are looking around for a suitable vase! As soon as the flower is over, the leaves unfold. They are bluish-green, rounded and deeply palmately cleft into 5-9 lobes, and are slightly glaucous underneath, that is, covered with a whitish bloom. The leaves eventually may grow about a foot high, shadowing the long, thin, pointed seed pods.



The thick perennial root contains a deep orange-red sap which gives the plant its common name, bloodroot. Another name for it is 'red puccoon.' The root sap is acrid and rather poisonous although it has been used medicinally in limited amounts. Old country people tell of squeezing out a few drops onto a spoonful of sugar and administering it to members of their family with bronchial complaints. A vinegar made from the rootstock used to be applied topically to ringworm, and used as a gargle for sore throats. However, I do not think experimenting with its use internally is to be advised, and in view of its unpleasant taste this is probably unlikely. The red juice has been used extensively as a dye. Indian warriors painted their face and arms with it, and the squaws used it for coloring their skins and baskets.

Sanguinaria canadensis is found throughout the eastern U.S., although it is commoner in the South, and tends to prefer the rich, open woods of the mountains and piedmont. My friends the Pitts, who have a beautiful wildflower garden in Charlottesville, tell me that bloodroot is easy to transplant. They dig it up with plenty of its surrounding earth and incorporate it into the open woodland situation where it will receive mottled sunlight. It grows and flowers well, will increase over the years, and sometimes has been known to produce 'double' flowers.

I think we should be thankful for plants such as *Sanguinaria* which do store up much of their nourishment in advance. Without them, we would have to wait a good deal longer to find something blooming in the spring.



Edited by MEL WHITE

WILDERNESS ADVENTURES SCHEDULED

The Wilderness Society will sponsor 106 trips into the wild lands of America during 1974, Stewart M. Brandborg, executive director of the national conservation organization, has announced.

Participants in the not-for-profit, educational outdoor adventure program will visit areas of wilderness across the continent, from the mangrove islands of the Florida Everglades to the tundra and glacial-carved mountains of Alaska. The public is invited to take part; membership in the Society is not required. Trips have been chosen to appeal to both the experienced and inexperienced. Family participation is encouraged. A director and doctor ordinarily accompany each group.

"The trip adventure program is conducted to enhance the enjoyment and appreciation of wilderness," Bob Cooney, the Society's outing director, said. He explained that proper use of pristine and often fragile backcountry areas is of special concern during these excursions by horseback, hiking with packstock, backpacking, canoe and raft, guided by some of the best outfitters in the business.

Six wilderness trips are scheduled specifically for young people, combining field study with outdoor adventure in wilderness environments.

Trip lengths vary from four to 12 days. Groups will be kept small to allow each participant to experience "a true feeling of wilderness values," Cooney said.

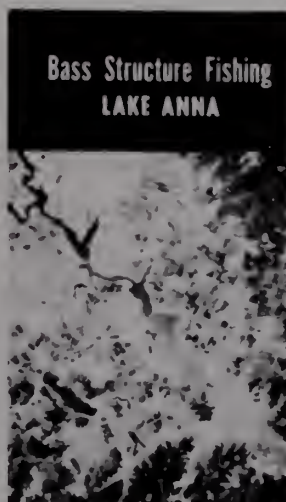
A brochure, including an application form and description of each trip is available from the Trip Department, The Wilderness Society, Western Regional Office, 4260 East Evans Avenue, Denver, Colorado 80222.

MARCH, 1974

NEW LAKE MAPS AVAILABLE

Virginia anglers soon will be able to obtain two new lake bottom contour maps. Scheduled for sale in early March is a Bass Structure Fishing Map of Lake Anna, and, in April, a twenty-six page map book on Kerr Reservoir.

The Lake Anna map was made up from aerial photography completed before the lake was impounded, making it possible to read the bottom like it was a three-dimensional picture. Each ten-



foot contour interval is indicated by a different color, making it easy to separate water depths. Underwater humps and holes show up clearly. Old woods lines indicate where stump beds may be found. Creek channels, drop-offs and other water features are easy to find. Camping areas, boat ramps, marinas and related facilities are also shown.

Both of the maps were compiled by the Alexandria Drafting Company, 417 East Clifford Avenue, Alexandria, Virginia 22305. Copies of the maps will be available through various sporting goods dealers or from the publisher. Price for the Lake Anna map is \$2.25.

A LETTER OF CORRECTION

Sir:

In the second item, Conservationgram, December *VIRGINIA WILDLIFE*, Ramsey's Draft is erroneously placed in Bath County. It is in Augusta County, just west of West Augusta Village, U. S. Route 250.

My inquiry to the Forest Service establishes the fact that only that part of the draft which is in the National Forest is involved in the proposal for a wilderness area. That lies close to a mile north of Route 250 on the south and contains the primitive hemlocks mentioned in your article. The Sierra Club, I was informed, advocates acquisition of some private land on the south.

E. Walton Opie
Publisher and Editor
The Staunton Leader



A REAL WHOPPER—James H. Talley of Louisa holds his 4-pound bluegill caught in October '73.

Know Your WARDENS

Text & Photos by F. N. SATTERLEE
Information Officer

Mr. Pittman's father was a merchant, farmer and Postmaster of the town of Regina, Virginia, where "Pitt" was born. As a youngster growing up on the farm with his five sisters and three brothers, Pitt took naturally to the outdoors and wild animals, birds and hunting and fishing.

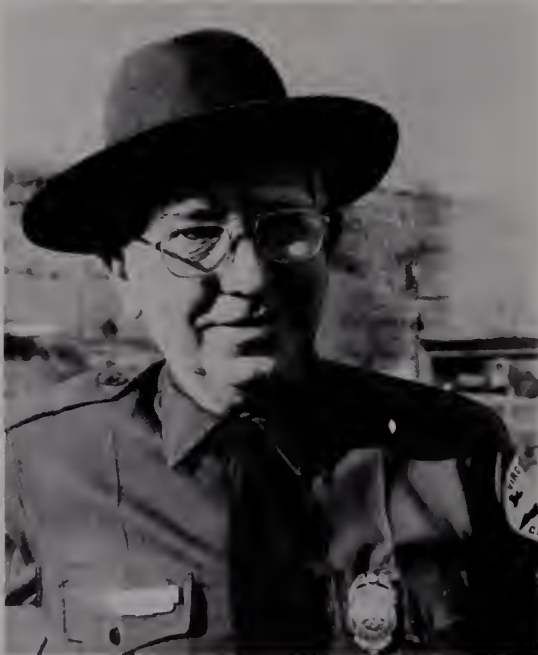
Following graduation from Wicomico High School in Northumberland County, Mr. Pittman became a full-time farmer. He worked at this profession until he learned that one of the Virginia game wardens in his area was planning to retire. Pitt applied for the job, and in an interview with the then Executive Director, I. T. Quinn, was hired to be warden in the Lancaster County area beginning in June of 1947. In 1966 Mr. Pittman was promoted to his current status as Area Leader Warden.

Being able to work with the public and especially young people and to do this mainly in the outdoors is one of the major attractions of being a warden for Pitt. This, coupled with the ever changing aspects and facets of his work, has been a great satisfaction to him. One of his favorite programs is the Hunter Safety Training Program. Since 1966 he has been responsible for graduating 3,793 students. He feels that the total is more on the order of 4,500 since he was involved in this type of training before the Commission formally adopted it.

Mrs. Pittman is the former Betty Orndorff from Chicago, Illinois. She and Pitt have two children, a son Harrison, and a daughter Lucinda. The Pittmans make their home in Regina, Virginia.



HENRY H. PITTMAN, JR.
Area Leader Warden



J. HUNTER PERRY
Game Warden

Hunter Perry was born in Hansonville, Virginia, in Russell County, where his father was engaged in general farming. His father was also an avid outdoorsman who loved to hunt and fish and who also taught his son about these things. Hunter can remember his father promising him, when he was 10 years old, that with certain conditions having been met and when he had reached his twelfth birthday, he would get a shotgun. He remembers that those two years seemed an eternity. He got the gun on time but for two years after that was not allowed to hunt alone; rather, he and his father went . . . and Hunter learned.

While attending high school in Lebanon, Virginia, Hunter played basketball and pitched and played second base on the ball team. Following graduation, he attended Hiwassee College in Madisonville, Tennessee, and later worked in that state. His father's illness required his return to Virginia, and for a time he worked with the Soil Conservation Service in the photo and mapping department.

In 1939, Hunter was accepted as a game warden and was assigned to the Russell County area. Throughout the time that he has been with the Commission his greatest reward has been the continued contact with the younger generation and being able to help them to appreciate and understand the outdoors and wildlife.

Mrs. Perry, now deceased, was the former Lillian Easterly of Hansonville, Virginia. The Perry's had five children and now Hunter has eleven grandchildren. He lives in Lebanon, Virginia.



Edited by ANN PILCHER

WALKING

I love to go through the woods
walking
and listen to my little friends talking;
I understand them once in awhile,
And let them know with a great big
smile.
The birds act like they're dancing at
a ball,
The crickets are chirping all the time,
and rabbits are making ready for
the fall,
with the grass so lovely with a color
of lime.
The deer are running through the
woods,
While bear are looking for something
to eat,
A hare would be a real good treat
While all the time squirrels gather
goods.

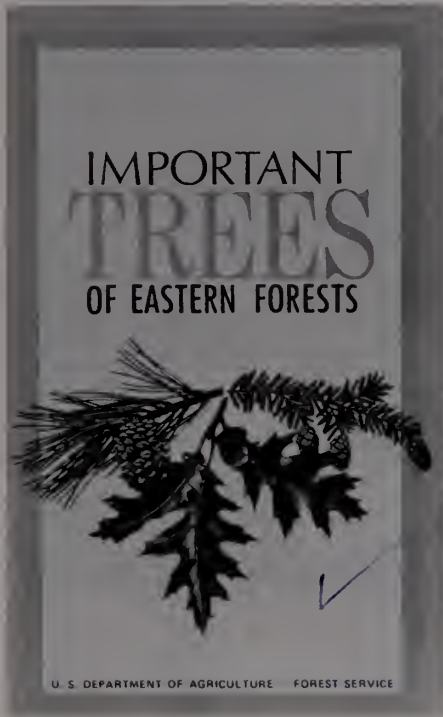
—GREGORY ADKINS,
6th Grade, 1972-73

Gladesville Elem. School, Galax

life and forest conservation, first aid, as well as basic hiking and camping skills to urban youth.

Willingness to take part is the main criteria for participation in the club, which will consist of a dozen boys (three from each cottage of a given cottage cluster) attending 12 meetings over a period of three months. Plans call for at least one on-campus and one off-campus overnight camping trip with perhaps two or more off-campus education trips to ranger stations, wildlife refuges, etc., to be worked into the schedule. In addition to help from individuals, a number of agencies, such as the Virginia Division of Forestry, Virginia Commission of Game and Inland Fisheries, and the National Audubon Society, have agreed to furnish teaching materials, films or speakers.

Each participant will earn a certificate of achievement for his efforts.



An interesting 4-1/2" x 7-1/2" 112 page publication, *Important Trees of Eastern Forests*, published in 1973 by the Forest Service, USDA, carries in color on every other page sketches of trees, leaves, fruit, bark. The illustrations by Rebecca Merrilees were taken from *Trees of North America* (a Golden Field Guide published in 1968 by Western Publishing Co., Inc.). *Important Trees* text was compiled by R. W. Neelands, writer-editor with the Southern Region, Forest Service office in Atlanta. Purpose of the booklet was threefold: "to acquaint the reader with the most common forest trees; to help him appreciate the fact that trees are useful as well as beautiful; and possibly to inspire him to further studies of the management, wise use, and development of the forest resource."

Single copies of the booklet are available without charge from the USDA Forest Service, 1720 Peachtree Rd., NW, Atlanta, Georgia 30309.

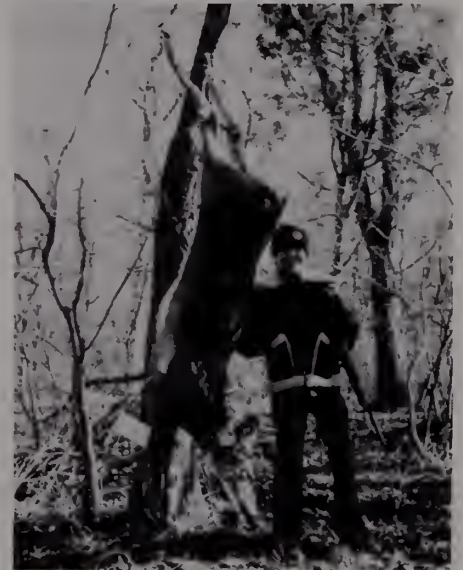
CAREER EDUCATION IN THE ENVIRONMENT, A Handbook. Designed to be used in secondary schools to explore environment problems and solutions and to provide information on existing and emerging career opportunities in this field; 1972, 407 pp., illus. \$3.00. Issued by the Supt. of Documents, US Govt. Printing Office, Washington, D. C. 20402.

CONSERVATION CLUB UNDERWAY AT BEAUMONT

Under the guidance of Herman Schmidt, housefather, Beaumont School for Boys is organizing a conservation club as an ongoing Saturday morning activity designed to accomplish two goals: to build and maintain nature trails marked out by the Division of Forestry for use by the general population at Beaumont and possible future use by groups from other training schools; and to provide a positive small-group activity designed to teach basic nature appreciation, wild-

"DOE DAY" YIELD

Scott Oberdick of Potomac, Maryland, bagged his 1973 doe shooting a 308 rifle on "doe day" (December 1) near Boyce, Virginia, while hunting on his grandparents' property. Grandfather E. L. Van Landingham, Jr., reports that Scott "is a wildlife enthusiast, having learned much from [Virginia Wildlife] magazine."





Edited by JIM KERRICK

MARINE CHARTS—GUIDE TO MORE BOATING FUN

Boatmen in saltwater areas are nearly all familiar with charts. Not so with the freshwater boatmen—those who do most of their boating on small inland lakes.

However, everyone who owns or operates a boat to any extent should become familiar with charts. A chart is very much like a road map. In fact, you could say it was a seagoing road map.

Anyone who can read a road map can learn to read a chart. Many things are similar. The road map points out roadways, gives information on the road surface, crossroads, mileage and other information of value to a driver. Charts point out waterways, outline the channels, hazards on or along the waterways, give mileage and general aids to navigation.

In most cases, a waterway channel is more flexible than a roadway. However, navigational charts point out areas where a boatman should NOT venture. Charts show obstructions and water depths. When one learns to read them, it is easy to see where it is safe to go and where it is dangerous.

Charts are inexpensive, in most cases running only a dollar or two a chart, and in many cases even less. Get a chart or charts of areas you would like to travel and learn to use them. You'll enjoy your boat more and, of course, you'll do so with more safety. Orient yourself with the chart before you leave the launching ramp.

Riverway charts are especially helpful to boatmen. They show river mileage, and in most cases, point out items of interest along the route. Although river channels change constantly, the charts show where sandbars are likely to be found. A little practice in reading water is also invaluable on river travel.

Using charts, you can plan a weekend outing at your leisure during the week. The charts will take you where you want to go, and back again.



Engine problems can often be traced to defective spark plugs.

And if you really want to become an expert at reading charts, the U.S. Dept. of Commerce, Coast and Geodetic Survey, Washington Science Center, Rockville, Md. 20852, has a detailed booklet on chart reading.

CHECK SPARK PLUGS

Rough idling is a rather common but easily corrected problem. Turn the low speed carburetor setting knob slowly until the engine smooths out. Defective spark plugs and improper fuel mixtures can also cause rough idling.

If the motor is sluggish at full throttle, poor spark plugs are more likely the answer. If inspection shows them to be fouled or burned, they should be replaced. Plugs can also be cleaned but for the small cost involved it's a better idea to put in new ones.

Poor high speed performance can also be caused by other factors which can usually be quickly found by a qualified marine dealer.

OUTBOARD KNOW-HOW PREVENTS LOST WEEKEND

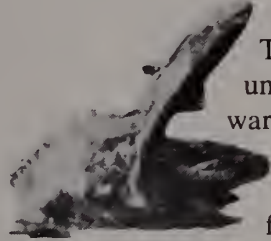
In this day of advanced technology and the sophisticated modern outboard motor, many boatmen are unfamiliar with the mechanics of their engine. A little outboard know-how, however, can go a long way in preventing the frustration of a lost boating weekend.

For example, what do you do if your engine won't start? First check the fuel system. Make sure the tank isn't empty and the fuel lines aren't kinked. Also check to see that the line is connected at both ends and that it is not being pinched under a tank or at some other spot. The condition of the engine's filter can also be a factor.

If a warm engine won't start, chances are it's flooded. To remedy this, disconnect the fuel line at the motor, advance the throttle and pull the starter rope several times. Then reconnect the line, squeeze the priming bulb and give it another try. This should do it.

AN OFFER TO THE NON HUNTING PUBLIC

It's all a matter of money, as most things usually are. If you want wildlife looked after, and believe it or not, wildlife does need looking after, then somehow that has to be paid for.



Those chaps in the green uniforms, call them game wardens, game protectors, conservation officers as you will, all have families to support and

rent to pay. The administrations which direct them and see to it that both game and non-game species, quail and blue-bird alike, have a fair chance to gladden your heart. They don't run on good wishes, either. They need money too—in large chunks.

Even bigger chunks are needed for the purchase of wild lands, of marshes not only for ducks but for red-winged blackbirds as well, for upland areas where gunners may seek pheasants in the fall but picnickers and hikers have the land all the rest of the year.

The trained biologists who know precisely what diseases affect the deer or what farmers can plant to best support a healthy population of either rabbits or finches— they cost money too.

And where does it all come from? Well, until now it has come from sportsmen, largely from hunters. They've anted up some 2.3 billion dollars in the past generation and a half for just such conservation purposes. They also pay self-imposed taxes on their arms and ammunition thus adding over forty million dollars a year more, which

by law must be used in conservation. The total tax money will soon hit the half billion mark. Their hunting licenses, over 110 million dollars a year, run our state fish and game departments. On the record, they're the bankers for conservation.

Now about that offer —

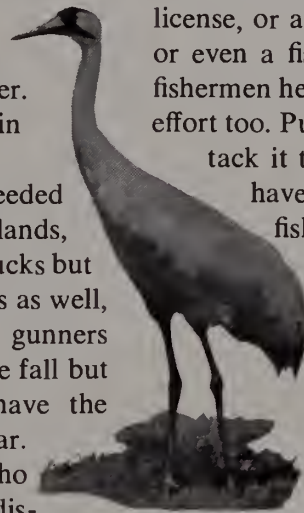
You go down to the nearest sporting goods store or the town clerk's office and buy yourself a hunting license, or a small game license — or even a fishing license because fishermen help in the conservation effort too. Put it in your pocket, or

tack it to the wall—you don't

have to use it if hunting or fishing is not your cup of tea. But be sure you can see it occasionally.

Why see it? Because then you'll know you put your money where your thoughts are. You didn't just

talk about conservation, you *did* something about it, something you can do again next year and the year after that. You made conservation work.



Buy a
small game license,
a big game license
or a fishing license.

It's a good way to do
something effective
for conservation.



National Shooting Sports Foundation, Inc.
1075 Post Road, Riverside, Conn. 06878

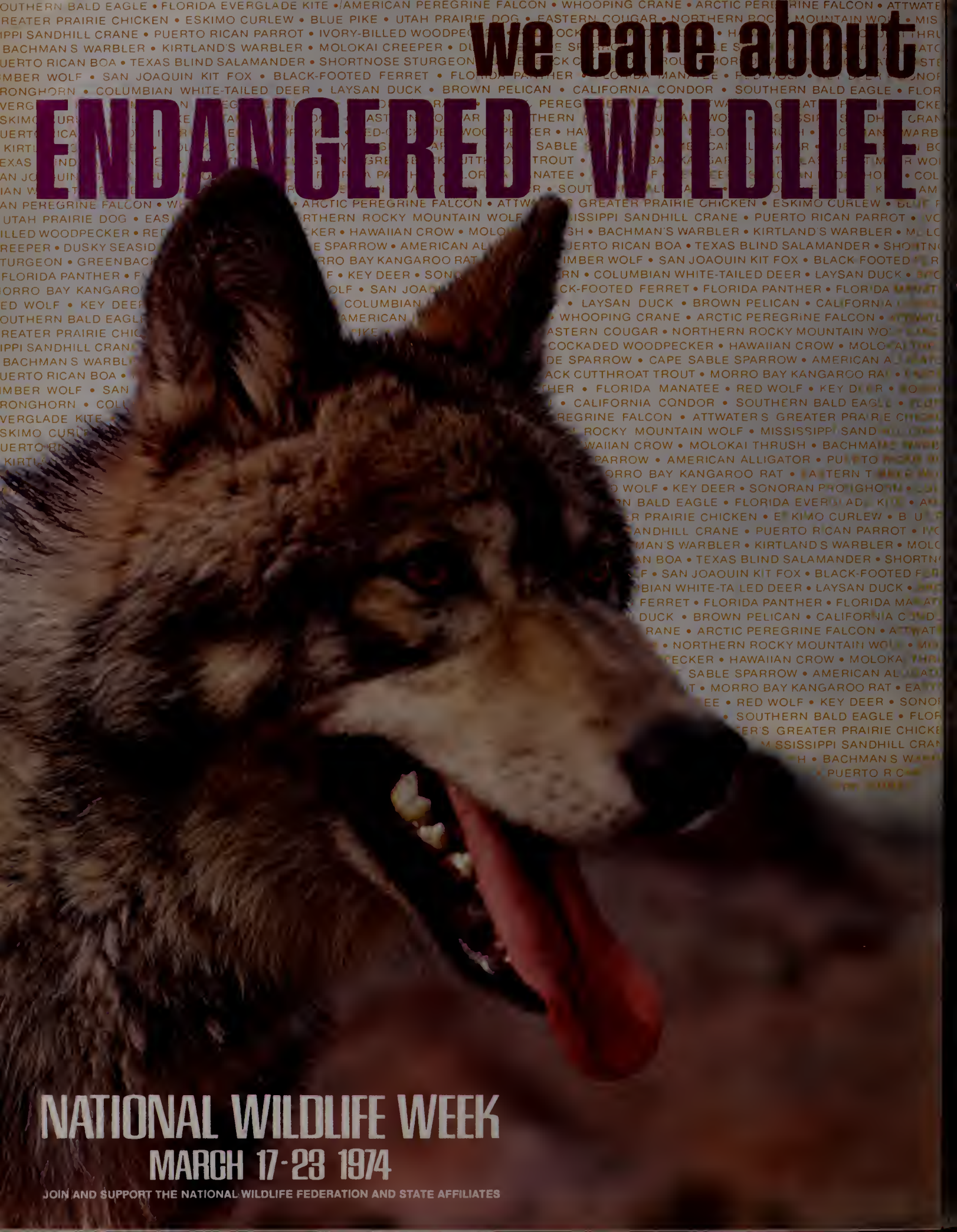
THE HUNTER AND CONSERVATION is mailed postpaid for 25¢ a copy or \$1.00 per package of 5 copies.

Yes, please send me your booklet. I enclose \$_____ for _____ copies.

Name _____

Address _____

City _____ State _____ Zip _____



we care about ENDANGERED WILDLIFE

NATIONAL WILDLIFE WEEK
MARCH 17-23 1974

JOIN AND SUPPORT THE NATIONAL WILDLIFE FEDERATION AND STATE AFFILIATES